

### REMARKS

The Applicants respectfully traverse and request reconsideration. The Applicants wish to thank the Examiner for indicating that Claims 3, 6, 10, 12, 13, 15, 17 and 18 would be allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claims.

Claims 1, 2, 4, 5, 7-9, 11, 14, and 16 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,923,365 (Tamir, et al.). Support for new claims 19-25 may be found at least in original claims 1-18, and pages 2, 3, 10 and 11 of the specification. No new matter is introduced in the new claims.

#### Tamir

Tamir is directed to a sports event video manipulating system. The system is limited to the analysis of video clips captured during sporting games. "A problem usually encountered in the analysis of team games is the difficulty in conceptualizing a **whole wide field** of view of an offensive or defensive tactic out of the succession of partially overlapping video frames that were captured by at least one T.V. camera using relatively narrow fields of view centering around the instantaneous location of the ball and active players." (Tamir, ¶ 11, lines 37-44.) (Emphasis added.)

All moving objects in the scene (players, referees and the ball) are continuously detected and tracked from frame to frame. (Tamir, ¶ 10, lines 28-30, Figs. 2 & 4.) Tamir teaches "[A]utomatic tracking and highlighting of objects selected on a first frame of a segment throughout the sequence of frames composing an event." (Tamir, ¶ 8, lines 5-8.) As used in Tamir, "[T]he term 'highlighting' refers to any suitable emphasis of an individual object . . . ." (Tamir, ¶ 11, lines 18-27.) As such, Tamir repeatedly teaches tracking an object by highlighting the object. (See for example, Tamir, ¶ 1, line 38; ¶ 2, line 28; ¶ 5, line 5, 12; ¶ 8, lines 5, 50, 57.)

A problem that has been encountered and identified as a possible obstacle to the edge detection task is image degradation due to motion-induced blur. This may be due either to camera scanning or to object motion. (Tamir, ¶ 9, lines 21-24.) Proper measures to prevent edge and texture aliasing are taken when applying any part of these dynamic emphasizing techniques. (Tamir, ¶ 11, lines 27-29.)

#### Independent Claim 1

Applicants claim *inter alia* "beginning a zoom mode; identifying a first portion of an image; displaying the first portion; detecting motion of an object within the portion of the image; selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image; and displaying the second portion."

The Office Action acknowledges that "Tamir, et al., does not specifically disclose a zoom mode." Furthermore, the Office Action also acknowledges that Tamir discloses the claimed subject matter except for "the claimed method of 'beginning a zoom mode.'"

Tamir, as cited at ¶ 10, lines 5-13, states "the tracking procedure takes into account the fact that there may be a change of magnification (zoom in and zoom out) and of objects' poses throughout the succession of frames" (Tamir, ¶ 10, lines 10-13) is limited to the tracking of an object in the context of highlighting all objects in a playing field, taking into account a magnification rather than "beginning a zoom mode; identifying a first portion of an image; displaying the first portion; detecting motion of an object within the portion of the image; selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image; and displaying the second portion."

Applicants would like to point out the distinction between tracking all moving objects on a screen by highlighting the moving objects on a screen as taught by Tamir, on the one hand, and "beginning a zoom mode; identifying a first portion of an image; displaying the first portion;

detecting motion of an object within the portion of the image; selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image; and displaying the second portion on the other." Further, Tamir cannot zoom in on each object as claimed since each player moves in a different direction, making the zoom mode as claimed impossible.

The Office Action asserts that the zoom mode is well known in the art, and Tamir, et al., discloses, "the tracking procedure takes into account the fact that there may be a change of magnification (zoom in and zoom) and of objects' poses through the succession of frames." (Citing Column 10, lines 10-13.) However, this change of magnification and of objects' poses is unlike Applicants' claimed subject matter, because Tamir teaches tracking all objects by highlighting each object rather than "selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image."

Applicants submit that "the tracking procedure taking into account magnification and of objects' poses through the succession of frames" is wholly different from and does not teach "selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image." Therefore Tamir's tracking system lacks the advantages present in the Applicants' claimed subject matter. Additionally, since Tamir states that the tracking procedure "takes into account magnification," Tamir's tracking procedures also take into account the limitations of, and problems associated with tracking.

As previously stated, Tamir repeatedly states that tracking is performed by way of highlighting all objects in a scene (players, referees and the ball), and therefore, any modification of Tamir to include a zoom function to the extent possible is limited to a zoom that permits tracking by highlighting all objects in the scene rather than "selecting a second portion of the

image such that the object appears at least a predetermined distance from an edge of the second portion of the image." The Office Action does not show, and the Applicants cannot find, where Tamir, as cited, describes "a zoom mode; while selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image; and displaying the second portion." Accordingly, Applicants respectfully request such a showing. Applicants submit that Tamir, as cited, does not disclose the Applicants' claimed subject matter, and further teaches away from the Applicants' invention, as discussed further below.

The Office Action asserts that step 100 of Fig. 3A in Tamir describes "identifying a first portion of an image." Step 100 references the process in which the video encoder 20 *grabs and digitizes the first video frame*. (Col. 8, lines 53-55; emphasis added). However, the cited portion of Tamir at step 100 which states "grabs and digitizes the first frame" is limited to digitizing a first video frame rather than *inter alia* "identifying a first portion of an image," as required by the claim. In contrast to grabbing an entire video frame, as cited in Tamir, Applicants claim, among other things, identifying a first *portion of an image*." (Emphasis added.) Applicants would like to point out the distinction between Tamir in Step 100 of Fig. 3A, which is limited to "grab[s] and digitizes the first frame" and "identifying a first portion of an image" as claimed.

Accordingly, the cited portions of Tamir teach merely grabbing and digitizing the first frame and make no reference to any portion of an image, let alone identifying any portion of an image.

→ As taught by the Applicants' claimed invention, the identification of a first portion of an image corresponds to a zoom portion selected by the user that indicates the portion of an image/video that the user wishes to magnify. (Page 9, last three paragraphs.) As shown above, Tamir, as cited, fails to disclose this identification of a first portion of an image in connection

with a selected zoom mode. Since Tamir as cited grabs and digitizes the first video frame, Tamir as cited is referring to a completely different parameter or condition than "identifying a first portion of an image," as claimed. As a result, Tamir as cited fails to make obvious the elements as arranged in claim 1, namely, the selection and display of a second portion of the image when motion is detected of an object within the first portion of the image. The Applicants respectfully submit that the rejection is improper and claim 1 is in proper condition for allowance.

The Office Action again cites Step 100 of Fig. 3A for teaching "displaying the first portion." However, the cited portion of Tamir, as stated above, merely recites "grabbing and digitization of the first frame," as opposed to "displaying the first portion." As a result, Tamir, as cited, is limited to grabbing and digitization of the entire first frame rather than "displaying the first portion," as required in the claims. The Applicants cannot find where Tamir, as cited, recites displaying any portion of an image, and further, the Applicants cannot find where Tamir, as cited, describes the first portion or displaying, and therefore Applicants request a showing. The cited portions of Tamir merely teach grabbing and digitization of the entire first frame, rather than reciting anything related to displaying the first portion. Tamir, therefore, is referring to a completely different function or situation than "displaying the first portion."

The Office Action recites Step 110 of Fig. 3A in Tamir as teaching "detecting motion of an object within the portion of the image." However, Step 110 of Fig. 3A in Tamir is limited to the "marking of object to be highlighted" rather than "detecting motion of an object within the portion of the image." Tamir at Step 110, as cited, makes no mention of detection of an object. Further, Tamir at Step 110 of Fig. 38 makes no mention of motion, let alone motion of an object, and let alone motion of an object within the portion of the image. Therefore, the cited portion of Tamir does not teach the claimed elements arranged as required by the claims, namely "detecting

motion of an object within the portion of the image.” Since Tamir as cited in Steps 100 and 110 fails to describe the first portion of an image, Tamir also fails to describe detecting motion of an object within the portion of the image. Accordingly, Applicants request such a showing. For at least these reasons, Tamir as cited fails to describe the claimed elements as asserted in the Office Action. As a result, Tamir fails to establish a *prima facie* case of obviousness.

Tamir as cited in the office action recites “grabbing and digitization of frame N” at Step 146, the “detection of marked objects in Frame N,” as shown in Step 150, and the “identification of fusion, splitting and occlusion situations” in Step 160, rather than “selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image.” Tamir as cited instead teaches grabbing and digitizing frame N, where N equals 2 in the step prior to Step 146 at Step 140. Further, Tamir as cited at Step 150 merely teaches detection of marked objects in frame N rather than “selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image.” As such, where the claims require that the second portion of the image is “such that the object appears at least a predetermined distance from an edge,” Tamir, as cited, appears to make no reference to the object appearing a distance from an edge. For example, at Step 150, the reference to detection of marked objects in frame N is with respect to frame N, where N equals 2, as explicitly shown in Step 140, rather than making reference to the objects in the prior steps, as asserted in the Office Action, such as in Steps 100 and 110.

Rather than describing “selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image,” the Office Action, as cited at Steps 150 and 160, describes detection of marked objects in frame N

and the identification of fusion, splitting and occlusion situations. The Office Action makes no reference in Tamir of any edge of the second portion of the image. As such, the Examiner has ignored yet another principal element of the invention. As a result, Tamir, therefore, is referring to a completely different condition or situation with respect to the claimed elements as recited, namely, "selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image." As stated previously, Tamir merely teaches the detection of marked objects in frame N, where N equals 2 at Step 140 and the identification of fusion, splitting and occlusions situations, rather than the selection of "a second portion of the image such that the object appears at least a predetermined distance from an edge of a second portion of the image." Consequently, Tamir does not teach the claimed elements as arranged by the claims including, among other things, "selecting a second portion of the image such that the object appears at least a predetermined distance from an edge of the second portion of the image."

It is well settled that to establish *prima facie* obviousness, all the claim limitations must be taught or suggested by the prior art. In addition, there must be some teaching, motivation or suggestion in either the prior art, or the references themselves to make the combination asserted by the Examiner. In reviewing the Office Action, the Examiner asserts "it would have been obvious to [one] skilled in the art to modify the system of Tamir, to provide it with a zoom mode at the beginning of the process, to take account of the magnification or (zoom in and zoom out) as Tamir, et al. clearly suggests, and in order to focus on the desired portion of the image for reliable and efficient processing."

Measuring a claimed invention against the standard established in §103 requires the oft-difficult but critical step of casting the mind back to the time of its invention, to consider the

thinking of one of ordinary skill in the art, guided only by the prior art references in the then-accepted wisdom in the field.<sup>1</sup> Close adherence to this methodology is especially important in the case of less technologically complex inventions, where the very ease with which the invention can be understood may prompt one “to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.”<sup>2</sup>

Case law makes it clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.<sup>3</sup> Combining prior art references without evidence of such a suggestion, teaching or motivation simply takes the inventor’s disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.<sup>4</sup> Evidence of a suggestion, teaching or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, although “the suggestion more often comes from the teachings of the pertinent references.”<sup>5</sup> (“The Board must identify specifically . . . the reasons one of ordinary skill in the art would have been motivated to select the references and combine them.”) The showing of such suggestion, teaching, or motivation must be clear and

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<sup>1</sup> *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983).

<sup>2</sup> *Id.*

<sup>3</sup> *In re Dembiczak*, 50 U.S.P.Q. 2d 164, 1617 (Fed. Cir. 1999).

<sup>4</sup> *Id.*; *see, e.g., Interconnect Planning Corp. v. File*, 774 F.2d 1132, 1138, 227 U.S.P.Q. 543, 547 (Fed. Cir. 1985).

<sup>5</sup> *Dembiczak*, 50 U.S.P.Q. 2d 164, 1617 (Fed. Cir. 1999); *In re Roffet*, 149 F.3d 1350, 1359, 47 U.S.P.Q. 2d 1453, 1459 (Fed. Cir. 1998).



particular.<sup>6</sup> Broad conclusory statements regarding the teaching of multiple references, standing alone, are not “evidence.”<sup>7</sup>

As previously stated, Tamir is directed to a video manipulation system for viewing sports events by, for example, coaches and players to understand their own and opponents’ past performance. (Tamir, ¶ 1, lines 13-16.) “Sports commentators also view and show video representations of team games in the course of analyzing these games for their viewers. (Tamir, ¶ 1, lines 16-18.) Tamir requires “all moving objects in the scene (players, referees and the ball) are continuously detected and tracked from frame to frame.” Rather than zooming in on a single object, as required in the claims, Tamir teaches highlighting a video representation of an object included in a sequence of video representations of an event, such as a sporting event rather than “beginning a zoom mode; identifying the first portion of an image; displaying the first portion; detecting motion of an object within the portion of the image; selecting a second portion of an image such that the object appears at least a predetermined distance from an edge of the second portion of the image” so that Tamir teaches a completely different method of operation. (Tamir, ¶ 8, lines 50-52, also see lines 45-46, lines 5-8.)

With regard to the Examiner’s assertion of the motivation of one skilled in the art to modify the system of Tamir, a careful examination of Tamir, as cited, reveals that rather than teaching “beginning a zoom mode; identifying the first portion of an image; displaying the first portion; detecting motion of an object within the portion of the image; selecting a second portion

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<sup>6</sup> Dembiczak, 50 U.S.P.Q. 2d 164, 1617 (Fed. Cir. 1999); *see, e.g.,* C.R. Bard, Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1352, 48 U.S.P.Q. 2d 1225, 1232 (Fed. Cir. 1998).

<sup>7</sup> Dembiczak, 50 U.S.P.Q. 2d 164, 1617 (Fed. Cir. 1999); *e.g.,* Elmurry v. Arkansas, Power & Light Co., 995 F.2d 1576, 1578, 27 U.S.P.Q. 2d 1129, 1131 (Fed. Cir. 1993); *In re Sichert*, 566 F.2d 1154, 1164, 196 U.S.P.Q. 207, 217 (CCPA 1977).

of an image such that the object appears at least a predetermined distance from an edge of the second portion of the image," Tamir instead teaches tracking all objects in the scene by highlighting each object and avoiding motion-induced blur that would avoid tracking an object in a zoom mode. (Tamir, ¶ 10, lines 28-30.) Tamir further requires that "when the number of objects has decreased below a given threshold it becomes reasonable to assume that the set has degenerated into an insignificant scene and the program terminates." (Tamir, ¶ 10, lines 62-65.) Tamir also teaches away from zooming because zooming would result in tracking only one or a reduced number of objects rather than all objects. As the number of objects decreases below a threshold, Tamir teaches that it becomes reasonable to assume the set had degenerated into an insignificant scene and the program therefore terminates. Consequently, Tamir teaches away from the claimed zoom mode because Tamir seeks, as a primary requirement, to track all moving objects in a scene by highlighting each object to facilitate "conceptualizing a whole wide field of view of an offensive or tactic" (Tamir, ¶ 11, line 37-44), rather than "beginning a zoom mode; identifying the first portion of an image; displaying the first portion; detecting motion of an object within the portion of the image; [and] selecting a second portion of an image such that the object appears at least a predetermined distance from an edge of the second portion of the image."

Tamir teaches resolving a completely different problem than the claims as described in Tamir below:

"A problem that has been encountered and identified as a possible obstacle to the edge detection task is image degradation due to motion-induced blur. This may be due either to *camera scanning or to object motion*. (Tamir, ¶ 9, lines 21-24.) (Emphasis added.) Proper

measures to prevent edge and texture aliasing are taken when applying any part of these dynamic emphasizing techniques.” (Tamir, ¶ 11, lines 27-29.)

Accordingly, since Tamir teaches avoiding artifacts such as motion-induced blur and aliasing, and since Tamir teaches the identification of an object by highlighting it, Tamir teaches away from the claims because any zooming in on an object would aggravate motion-induced blur, and possibly would aggravate edge and texture aliasing when applying a zoom function to the teachings of Tamir. As such, since the previously described portions of Tamir teach away from the claims, one skilled in the art would not be motivated to modify Tamir as suggested in the Office Action to provide a zoom video tracking image as claimed.<sup>8</sup>

The only reference in Tamir, as cited, relating to a zoom function states “the tracking procedure takes into account the fact that there may be a change of magnification (zoom in and zoom out) and of objects’ poses throughout the succession of frames.” (Tamir, ¶ 10, lines 10-13.) However, the zoom function described is discussed in the context of the tracking procedure by highlighting the object, and the tracking procedure explicitly discusses the problems encountered and identified as possible obstacles to the tracking procedure. (Tamir, ¶ 9, lines 20-27.) Immediately after introducing the concept of zoom, Tamir discusses problems and obstacles associated with the tracking procedure including “fusion,” “splitting,” and “occlusion.” (Tamir, ¶ 10, lines 15-19.) Tamir suffers from the problems of zooming while tracking resulting in the motion-induced blur described in Tamir at ¶ 9, lines 21-24, and also as described in the background section of the instant application on pages 2-3:

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<sup>8</sup> A prior art reference must be considered in its entirety, *i.e.*, as a whole including portions that would lead away from the claimed invention. (W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 U.S.P.Q. 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984) M.P.E.P. 2141.02).

Panning of the camera exacerbates the problem. Panning is a cinematographic technique in which a cameraman pivots the camera to show a scene that is too large to be shown conveniently in a single frame. When a camera is panned, the image appears to slide from one edge of the full frame to the other edge of the full frame. Accordingly, unless the zoom portion is moved with respect to the full frame, the zoom portion includes images that slide from one edge of the zoom frame to the other.

Accordingly, taken into proper context, Tamir teaches the avoidance of zooming during the tracking mode because zooming and attempting to track all moving objects by highlighting each object in the scene (Tamir, ¶ 10, lines 28-30) would exacerbate the problems and obstacles that this modification sought to avoid. Therefore, taking the teachings of Tamir into proper context shows that Tamir teaches a method and apparatus for tracking all moving objects in the scene (players, referees and the ball) by highlighting the objects of interest, while avoiding the problems associated with such tracking by attempting to mitigate motion-induced blur, aliasing, as well as detecting other phenomena such as fusion, splitting, and occlusion. Accordingly, not only does Tamir teach away from providing a zoom video tracking image, as required in the claims as filed such a modification, as asserted in the Office Action, would indeed change the principle of operation of Tamir, because modifying Tamir to zoom in on any particular object, while tracking all moving objects, would defeat the very purpose of analyzing all players and the ball, and would greatly increase problems associated with the tracking method Tamir specifically sought to avoid.<sup>9</sup>

Nevertheless, according to the Advisory Action, the modification of Tamir to incorporate the claimed zoom mode is not used out of context. However, the zoom mode is explicitly

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<sup>9</sup> If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. In *re Ratti*, 270 F.2d 810, 123 U.S.P.Q. 349 (CCPA 1959). See *M.P.E.P.* 2143.01.

discussed with respect to the tracking procedure, and since the tracking mode is explicitly discussed in the context of highlighting all objects in a playing field along with the avoidance of motion-induced blur, the tracking procedure employing a zoom mode must be read in such context. Taken in proper context, Tamir does state the only conditions under which a zoom mode would be appropriate. For example, Tamir repeatedly states that the purpose of Tamir is to track the objects and player via highlighting in a sports setting and as such Tamir requires that the program terminate if the number of objects decreases below a certain threshold. Therefore, zooming would eliminate objects on the screen, causing the program to terminate and reducing the entire field of view. Tamir also teaches that the problems associated with tracking images would cause more difficulty in tracking the objects and players pursuant to the objectives of Tamir. The modification of Tamir to include a zoom mode as asserted by the Office Action would defeat Tamir's principles of operations of tracking an object and the players on a playing field and would aggravate rather than avoid artifacts that would interfere with tracking such as motion-induced blur and aliasing. Further, Tamir as cited in the office action fails to describe how the aggravation of zoom-induced blur and the aggravation of the reduction of a number of objects and players on a playing field through the use of a zoom may be overcome. Furthermore, the Office Action fails to explain how Tamir shows that Tamir takes into account these problems of achieving the objective of Tamir, namely the tracking of all objects on a field and the use of well-defined edges such that blurring is reduced, not increased.

The Advisory Action and the Office Action state "[n]owhere does Tamir disclose or suggest that zooming onto an object would increase problems of tracking all the objects. This is the Applicants' own interpretation, not Tamir's teaching." However, neither the Advisory Action nor the Office Action specifically addresses the cited portions previously argued that

teach away from zooming while tracking. Further, as previously stated, the zoom mode is explicitly discussed in the context of highlighting and the problems related to such highlighting are also discussed in the context of highlighting. Therefore, Tamir teaches a completely different tracking method. The assertion that Tamir "does not disclose or suggest that zooming onto an object would increase problems of tracking of the object" contradicts the assertion in the Office Action. If the assertion that, although Tamir does not specifically disclose a zoom mode at the beginning of the process of tracking an object, one skilled in the art would do so, then one also would consider the problems of zooming while tracking the object as explicitly taught by Tamir so that tracking all objects would work. The acknowledgement in the Office Action that Tamir "does not disclose or suggest that zooming onto an object would increase tracking of the objects" shows that Tamir does not suggest the use of zooming while tracking all the objects as claimed.

The assertion in the Office Action that "Tamir does not disclose or suggest that zooming onto an object would increase problems of tracking all the objects" tends to show that Tamir never contemplated the use of zooming with its tracking functions such that the object appears at least a predetermined distance from an edge, since doing so would require addressing specifically the problems associated with zooming. For example, if the zoom mode is contemplated by Tamir, then how are the aggravated effects of motion-induced blur during a zoom mode as explicitly discussed in Tamir compensated for when tracking an object? What happens to edge detection as explicitly discussed in Tamir as a result of zoom mode while tracking an object? What happens when the number of objects decreases below a given threshold in a scene as a result of zoom mode? If Tamir fails to suggest any problems associated with zooming while tracking, it is because Tamir never contemplates the use of a zoom mode as claimed, namely "selecting a second portion of an image such that the object appears at least a

predetermined distance from an edge of the second portion of the image.” Therefore, Tamir completely fails to describe or contemplate “beginning a zoom mode; identifying the first portion of an image; displaying the first portion; detecting motion of an object within the portion of the image; selecting a second portion of an image such that the object appears at least a predetermined distance from an edge of the second portion of the image.”

Further, if one were to modify Tamir to provide the zooming mode function as claimed, namely “selecting a second portion of an image such that the object appears at least a predetermined distance from an edge of the second portion of the image,” rather than highlighting the tracked object, such a modification to Tamir would render Tamir unsatisfactory for its intended purpose because again, rather than zooming in on an object, Tamir teaches tracking all moving objects in a scene for the purpose of analyzing a sporting event as discussed above.<sup>10</sup> As previously stated, Tamir seeks to solve the problem of analyzing a “whole field of view of a sporting event,” and therefore, zooming in on an object would render such an analysis of the whole field of view impossible because a modification as suggested in the Office Action would reduce the field of view to less than the whole field of view of a sporting event and make the analysis sought to be performed in Tamir greatly hindered, if not impossible.

One would not have any reasonable expectation of successfully reproducing the claimed invention, if so modified as asserted in the Office Action. The Applicants respectfully submit that the Examiner has misinterpreted Tamir and merely attempted to reconstruct the subject matter in Claim 1, rather than pointing to specific information in Tamir that suggests the combination as claimed, namely “selecting a second portion of an image such that the object

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<sup>10</sup> If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. In re Gordon, 733 F.2d 200, 221 U.S.P.Q. 1125 (Fed. Cir. 1984), M.P.E.P. 2143.02.

appears at least a predetermined distance from an edge of the second portion of the image.” As stated above, Tamir describes solving the problem usually encountered in the analysis of team games where the difficulty is in conceptualizing a whole wide field of view of an offensive or defensive tactic out of the succession of partially overlapping video frames that were captured by at least one television camera using a relatively narrow field of view for entering around the location of the ball and active players. (Tamir, ¶ 11, lines 38-44.) Zooming would provide less than a “whole wide field of view” and would therefore defeat the objective of conceptualizing a whole wide field of view of an offensive or defensive tactic. As described above, not only is there no motivation to combine or to modify Tamir to perform the zoom mode as previously stated, Tamir actually teaches away from the claimed zoom mode. The Applicants respectfully submit that the Examiner’s obviousness analysis is limited to a discussion of the way Tamir can be modified to read on the claim.

Further, the proposed modification of Tamir would result in impermissibly changing the principle of operation of Tamir, and further yet, would render Tamir unsatisfactory for its intended purpose. Because Tamir is directed to a system that teaches away from allowing a user to zoom in on a portion of an image, Tamir fails to teach or suggest each and every element in the claims. The Applicants respectfully request a showing as to a reference that would make obvious each element as arranged in the claims. Consequently, at least for the reasons stated above, the alleged reference-by-reference and limitation-by-limitation analysis fails to demonstrate how Tamir teaches or suggests the combination to yield the claimed invention. As a result, the Applicants submit that the Office Action fails to establish a *prima facie* case of obviousness for all the claims.



**Dependent Claim 2**

With regard to Claim 2, the Applicants respectfully repeat the relevant remarks made with respect to Claim 1. Specifically, the Applicants note that, as cited, Tamir fails to make obvious, among other things, any use of a zoom mode and the detection of an edge or the identification of a first or second portion of an image. Therefore, Tamir also fails to teach any subsequent limitation upon Claim 2. Specifically, Tamir does not anticipate the step of terminating the zoom mode when at least one edge of the second portion of the image extends beyond the image.

Claim 2 explicitly recites the condition "When at least one edge of the second portion of the image extends beyond the image, the zoom mode is terminated." The Examiner's citation to Step 170 of Fig. 3B does not teach this limitation. Figs. 3A and 3B show a flowchart for the process of highlighting an object in a sequence of a video representation of an event. Step 170 pertains to the detection of objects that have entered or exited the camera's field of view. The system executes a disappearance analysis to monitor objects that have left the field of view and a reentry analysis to identify objects that have reentered the scene/camera field of view. (Col. 10, lines 35-45.) For example, a player in a sporting event may move outside of the camera's field of view. When this event occurs, a disappearance analysis is executed to monitor this change. Step 170 does not teach the limitation in which a *zoom mode is canceled* when an edge of the second portion of the image extends beyond the image (emphasis added). Tamir does not distinguish between the at least one edge of the portion of the image and the entire image whereby the portion of the image represents a magnified portion of the image as defined by a user's zoom parameters. The Applicants respectfully believe Claim 2 is in proper condition for allowance.

**Independent Claims 5 and 14**

Claims 5 and 14 correspond to a television system corresponding to Claim 1 and is also believed to be in proper condition for allowance. The Applicants repeat the above relevant remarks. The Office Action acknowledges that "Tamir, et al. does not disclose a tuner. However, the Examiner takes official notice that a tuner is a very well known object in the art and therefore it would have been obvious to those skilled in the art at the time the invention was made to provide a tuner device to modify the system of Tamir, et al." Nevertheless, the system described by Tamir, rather than using a tuner, would receive a signal directly from a camera or video player and as such would not need the use of a tuner; such a device would be unnecessary. Therefore, the Applicants hereby challenge the Examiner's assertion that such a device as arranged in the claims is very well known in light of the teachings of Tamir in the context of Tamir's sports analysis system, since Tamir clearly is more likely directed to a closed circuit camera system or private video recorder rather than a broadcast television system to be viewed by the general public, since Tamir teaches the use of this system specifically for the aid of players and coaches rather than for any entertainment value, as would be the case in a broadcast television system. Claims 5 and 14 also recite other novel and nonobvious elements and are believed to be in proper condition for allowance.

**Dependent Claim 7**

Dependent Claim 7 recites "wherein the television system is one of a set top box, a desk top box, and a personal digital system." The Applicants are unable to find where Fig. 1 describes a set top box, a desk top box, and a personal digital assistant. As such, the Applicants request the Examiner to provide a limitation-by-limitation analysis of each and every element as arranged in the claims and a corresponding citation in the reference as appropriate. As such, the Office Action fails to describe all of the limitations of Claim 7 and how they are recited in Fig. 1 of

Tamir. Additionally, the Applicants repeat the same remarks with respect to Claims 1 and 5. Therefore Claim 7 is believed to be in proper condition for allowance.

**Independent Claim 8**

The Applicants repeat the same remarks with respect to Claim 1, and therefore, Claim 8 is in proper condition for allowance. Claim 8 contains a step of, among other things, beginning a zoom mode and identifying a first portion of an image. Additionally, the Applicants repeat the same remarks with respect to Claim 1, and therefore Claim 8 recites other novel and nonobvious elements and is believed to be in proper condition for allowance.

**Dependent Claims 4 and 16**

With respect to Claims 4 and 16, the Applicants respectfully repeat the relevant remarks made with respect to Claim 1. Because Tamir does not anticipate identifying a first or second *portion* of an image and is concerned only with tracking an entire camera field of view, the Applicants maintain that Tamir cannot make obvious any subsequent limitation describing the type of image corresponding to a selected portion (emphasis added). Furthermore, the Applicants cannot find where Tamir describes the use of detecting motion of an object within the portion of the image by examining MPEG2 motion vectors. The Applicants respectfully request a showing including the column and line number within Tamir that teaches this limitation. Accordingly, the Applicants respectfully further believe Claims 4 and 16 recite novel and nonobvious subject matter and are in proper condition for allowance.

**Dependent Claim 9**

Claim 9, dependent upon Claim 8, contains the same language as Claim 2 and is therefore also believed to be in proper condition for allowance. Additionally, the Applicants repeat the same remarks with respect to Claims 1 and 8. As previously stated above, the Applicants assert, among other things, that since Tamir fails to describe the beginning of a zoom mode, Tamir also

fails to describe determination of a zoom mode. Therefore Claim 9 is believed to be in proper condition for allowance.

**Dependent Claim 11**

The Applicants repeat the above relevant remarks, including those with respect to Claims 1, 4, 8 and 16. Claim 11, dependent upon independent Claim 8, contains new and nonobvious matter not contained in Claim 8 and therefore is also believed to be in proper condition for allowance.

**Dependent Claim 16**

The Applicants repeat the above relevant remarks, including those with respect to Claims 1, 4, 8 and 16. Claim 16, dependent upon independent Claim 14, contains new and nonobvious matter and therefore is also believed to be in proper condition for allowance. Furthermore, the Applicants take notice that Claim 16 corresponds to the system claim of Claim 4 and was not rejected. For the foregoing reasons, the Applicants maintain that Claim 16 recites novel and nonobvious subject matter and is also in proper condition for allowance.

**New dependent Claim 19**

The Applicants repeat the above relevant remarks. Again, as previously stated, rather than beginning a zoom mode Tamir states, "A problem usually encountered in the analysis of team games is the difficulty in conceptualizing a **whole wide field** of view of an offensive or defensive tactic out of the succession of partially overlapping video frames that were captured by at least one T.V. camera using relatively narrow fields of view centering around the instantaneous location of the ball and active players." (§ 11, lines 37-44.) Accordingly, the modification proposed in the Office Action would render Tamir as modified unsatisfactory for its intended purpose because zooming would reduce "a whole wide field" rather than facilitate a "whole wide field."

As previously stated, Tamir repeatedly states that tracking is performed by way of highlighting all objects in a scene (players, referees and the ball), and therefore, any modification of Tamir to include a zoom function to the extent possible is limited to a zoom that permits tracking by highlighting all objects in the scene rather than "the second portion of the image is selected such that the at least one object remains within the second portion of the image." Applicants submit that Tamir, as cited, does not disclose the Applicants' claimed subject matter, and further teaches away from the Applicants' invention, as discussed above. Claim 19, dependent upon independent Claim 1, contains new and nonobvious matter not contained in Claim 1 and therefore is also believed to be in proper condition for allowance.

**New dependent Claim 20**

The Applicants repeat the above relevant remarks. Tamir instead teaches tracking all objects in the scene by highlighting each object and avoiding motion-induced blur that would avoid tracking an object in a zoom mode. (Tamir, ¶ 10, lines 28-30.) Tamir further requires that "when the number of objects has decreased below a given threshold it becomes reasonable to assume that the set has degenerated into an insignificant scene and the program terminates." (Tamir, ¶ 10, lines 62-65.) Therefore, Tamir fails to teach "wherein the object is a single object within the portion of the image." Claim 20, dependent upon independent Claim 1, contains new and nonobvious matter not contained in Claim 1 and therefore is also believed to be in proper condition for allowance.

**New independent Claim 21 and new dependent claims 22-25.**

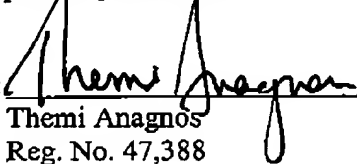
The Applicants repeat the above relevant remarks. As previously stated, Tamir repeatedly states that tracking is performed by way of highlighting all objects in a scene (players, referees and the ball), and therefore, any modification of Tamir to include a zoom function to the extent possible is limited to a zoom that permits tracking by highlighting all objects in the scene

rather than "adjusting the relationship of the zoom image relative to the full frame, such that the at least one object remains within the zoom image in response to detecting motion of the at least one object." Applicants submit that Tamir, as cited, does not disclose the Applicants' claimed subject matter, and further teaches away from the Applicants' invention, as discussed above. Claims 22-25, dependent upon independent Claim 21, contain new and nonobvious matter not contained in Claim 21 and therefore are also believed to be in proper condition for allowance.

The Applicants respectfully request that the pending claims be allowed to issue. Should the Examiner wish to discuss any aspect of the application, the Examiner is invited to contact the undersigned at his convenience directly at (312) 609-7970.

Respectfully submitted,

By:

  
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